

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Carlyle Group Inc.</u> _____ (Last) (First) (Middle) <u>C/O THE CARLYLE GROUP</u> <u>1001 PENNSYLVANIA AVE. NW, SUITE 220S</u> _____ (Street) <u>WASHINGTON DC 20004-2505</u> _____ (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>MKS INSTRUMENTS INC [ MKSI ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>05/08/2023</u>	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	05/08/2023		s		2,000,000	D	\$86.125	6,482,732	I	See footnotes <sup>(1)</sup> (2)(3)(4)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
					(A)	(D)	Date Exercisable	Expiration Date					

1. Name and Address of Reporting Person\*  
Carlyle Group Inc.  
 \_\_\_\_\_  
 (Last) (First) (Middle)  
C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S  
 \_\_\_\_\_  
 (Street)  
WASHINGTON DC 20004-2505  
 \_\_\_\_\_  
 (City) (State) (Zip)

1. Name and Address of Reporting Person\*  
Carlyle Holdings II GP L.L.C.  
 \_\_\_\_\_  
 (Last) (First) (Middle)  
C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S  
 \_\_\_\_\_  
 (Street)  
WASHINGTON DC 20004-2505  
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1. Name and Address of Reporting Person\*  
Carlyle Holdings II L.L.C.  
 \_\_\_\_\_  
 (Last) (First) (Middle)

C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S

(Street)  
WASHINGTON DC 20004-2505

(City) (State) (Zip)

1. Name and Address of Reporting Person\*  
[CG Subsidiary Holdings L.L.C.](#)

(Last) (First) (Middle)

C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S

(Street)  
WASHINGTON DC 20004-2505

(City) (State) (Zip)

1. Name and Address of Reporting Person\*  
[TC Group Cayman Investment Holdings, L.P.](#)

(Last) (First) (Middle)

C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S

(Street)  
WASHINGTON DC 20004-2505

(City) (State) (Zip)

1. Name and Address of Reporting Person\*  
[TC Group Cayman Investment Holdings Sub L.P.](#)

(Last) (First) (Middle)

C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S

(Street)  
WASHINGTON DC 20004-2505

(City) (State) (Zip)

1. Name and Address of Reporting Person\*  
[TC Group VI Cayman, L.L.C.](#)

(Last) (First) (Middle)

C/O THE CARLYLE GROUP  
1001 PENNSYLVANIA AVE. NW, SUITE 220S

(Street)  
WASHINGTON DC 20004-2505

(City) (State) (Zip)

1. Name and Address of Reporting Person\*  
[TC Group VI Cayman, L.P.](#)

(Last) (First) (Middle)

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(Street)  
WASHINGTON DC 20004-2505

(City) (State) (Zip)

**Explanation of Responses:**

1. Following the transactions reported herein, includes (i) 3,958,719 shares held by Carlyle Partners VI Cayman Holdings, L.P., (ii) 1,726,956 shares held by CEP IV Participations, S.a r.l. SICAR and (iii) 797,057 shares held by Gamma Holding Company Limited.

2. The Carlyle Group Inc., which is a publicly traded entity listed on Nasdaq, is the sole member of Carlyle Holdings II GP L.L.C., which is the managing member of Carlyle Holdings II L.L.C., which, with respect to the securities reported herein, is the managing member of CG Subsidiary Holdings L.L.C., which is the general partner of TC Group Cayman Investment Holdings, L.P., which is the general partner of TC Group Cayman Investment Holdings Sub L.P., which is the sole shareholder of TC Group VI Cayman, L.L.C., which is the general partner of TC Group VI Cayman, L.P., which is the general partner of Carlyle Partners VI Cayman Holdings, L.P.

3. TC Group Cayman Investment Holdings Sub L.P. is also the sole shareholder of CEP IV Managing GP Holdings, Ltd. and the sole member of CAP IV, L.L.C. CEP IV Managing GP Holdings, Ltd. is the general partner of CEP IV Managing GP, L.P., which is the managing general partner of Carlyle Europe Partners IV, L.P., which is the majority shareholder of CEP IV Participations, S.a r.l. SICAR. CAP IV, L.L.C. is the general partner of CAP IV General Partner, L.P., which is the general partner of Carlyle Asia Partners IV, L.P., which is the majority shareholder of Gamma Holding Company Limited.

4. Accordingly, each of these entities may be deemed to share beneficial ownership of the securities held of record by Carlyle Partners VI Cayman Holdings, L.P., CEP IV Participations, S.a r.l. SICAR and Gamma Holding Company Limited. Each of them disclaims beneficial ownership of such securities.

**Remarks:**

Due to the limitations of the electronic filing system, each of Carlyle Partners VI Cayman Holdings, L.P., CEP IV Managing GP Holdings, Ltd., CEP IV Managing GP, L.P., Carlyle Europe Partners IV, L.P., CEP IV Participations, S.a r.l. SICAR, CAP IV, L.L.C., CAP IV General Partner, L.P., Carlyle Asia Partners IV, L.P. and Gamma Holding Company Limited are filing a separate Form 4.

The Carlyle Group Inc., By:  
/s/ Anne Frederick, Attorney-  
in-fact for Curtis L. Buser, 05/10/2023  
Chief Financial Officer  
Carlyle Holdings II GP  
L.L.C., By: The Carlyle Group  
Inc., its sole member, By: /s/  
Anne Frederick, Attorney-in-  
fact for Curtis L. Buser, Chief 05/10/2023  
Financial Officer  
Carlyle Holdings II L.L.C.,  
By: /s/ Anne Frederick, 05/10/2023  
Attorney-in-fact for Curtis L.  
Buser, Managing Director  
CG Subsidiary Holdings  
L.L.C., By: /s/ Anne  
Frederick, Attorney-in-fact for 05/10/2023  
Curtis L. Buser, Managing  
Director  
TC Group Cayman Investment  
Holdings, L.P., By: CG  
Subsidiary Holdings L.L.C.,  
its general partner, By: /s/ 05/10/2023  
Anne Frederick, Attorney-in-  
fact for Curtis L. Buser,  
Managing Director  
TC Group Cayman Investment  
Holdings Sub L.P., By: TC  
Group Cayman Investment  
Holdings, L.P., its general  
partner, By: CG Subsidiary 05/10/2023  
Holdings L.L.C., its general  
partner, By: /s/ Anne  
Frederick, Attorney-in-fact for  
Curtis L. Buser, Managing  
Director  
TC Group VI Cayman, L.L.C.,  
By: /s/ Jeremy W. Anderson, 05/10/2023  
Authorized Person  
TC Group VI Cayman, L.P.,  
By: TC Group VI Cayman  
L.L.C., its general partner, By: 05/10/2023  
/s/ Jeremy W. Anderson,  
Authorized Person

\*\* Signature of Reporting Person      Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.**